

Attachment I
Curriculum Vitae for Dr. Aron
And Dr. Harris

DEBRA J. ARON

LECG
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EDUCATION

Ph.D., Economics, UNIVERSITY OF CHICAGO, Chicago, IL, 1985.
Graduate advisors: Sanford J. Grossman (chairman), Edward P. Lazear, and Sherwin Rosen.

A.B. (summa cum laude), Economics, UNIVERSITY OF CALIFORNIA AT LOS ANGELES, Los Angeles, CA, 1979.

PRESENT POSITION

LECG, Evanston, IL, 1995-present
Director

ACADEMIC AND PROFESSIONAL EXPERIENCE

NORTHWESTERN UNIVERSITY, J. L. Kellogg Graduate School of Management,
Evanston, IL, 1985-1995
Visiting Assistant Professor of Managerial Economics, 1993-1995
Assistant Professor of Managerial Economics, 1985-1992.

HOOVER INSTITUTION, 1992-1993
National Fellow

UNIVERSITY OF CHICAGO, Department of Economics, Chicago, IL, 1983-1984
Instructor

CIVIL AERONAUTICS BOARD, Office of Economic Analysis, Washington, DC,
Summers, 1979 and 1980
Staff Economist

HONORS & AWARDS

Guthman Research Chair, Kellogg Graduate School of Management, Northwestern University, Summer 1994.

Hoover National Fellowship, Hoover Institution, 1992-1993.

Faculty Research Fellow, National Bureau of Economic Research, 1987-1990.

Pepsico Research Chair, Northwestern University, 1990.

Kellogg Research Professorship, Northwestern University, 1989.

National Science Foundation Research Grant, 1987-1988.

Buchanan Chair, Kellogg Graduate School of Management, Northwestern University, 1987-1988.

IBM Chair, Kellogg Graduate School of Management, Northwestern University, 1986-1987.

RESEARCH INTERESTS

Industrial organization and business strategy, organization theory, theory of the firm, compensation and incentives, and the relationship between firm structure, human resources, management and incentives.

TEACHING

Courses taught: Intermediate Microeconomic Theory at the undergraduate level, Managerial Economics (microeconomic theory as applied to business strategy and decision making) at the M.B.A. level, The Economics of Information at the Ph.D. level.

New courses developed: Pricing Strategy; Managerial Economics for Manufacturing.

Also qualified to teach: graduate Microeconomic Theory; Industrial Organization and Labor Economics (all levels); the Economics of Personnel, Public Finance, Applied Game Theory (undergraduate or M.B.A levels).

PUBLICATIONS AND WORKING PAPERS

"Effecting a Price Squeeze Through Bundled Pricing," with Steven S. Wildman, in *Competition, Regulation, and Convergence: Selected Papers from the 1998 Telecommunications Policy Research Conference*, Gillett and Vogelsang, Eds., (New Jersey: Lawrence Erlbaum Associates, Inc.) 1999, forthcoming.

"Worldwide Wait? How the Telecom Act's Unbundling Requirements Slow the Development of the Network Infrastructure," with Ken Dunmore and Frank Pampush, *Industrial and Corporate Change*, vol.7, no. 4, 1998, pp. 615-621.

"The Pricing of Customer Access in Telecommunications," with Steven S. Wildman, *Industrial and Corporate Change*, vol. 5, no. 4, 1996, pp. 1029-1047.

"Bonus and Penalty Schemes as Equilibrium Incentive Devices, With Application to Manufacturing Systems," with Pau Olivella, *Journal of Law, Economics, and Organization*, 10, Spring 1994, pp. 1-34.

"Diversification as a Strategic Preemptive Weapon," *Journal of Economics and Management Strategy*, 2, Spring 1993, pp. 41-70.

"Using the Capital Market as a Monitor: Corporate Spin-offs in an Agency Framework," *RAND Journal of Economics*, 22, Winter 1991, pp. 505-518.

"Firm Organization and the Economic Approach to Personnel Management, *American Economic Review*, vol. 80, no. 2, May 1990, pp. 23-27.

"The Introduction of New Products," with Edward P. Lazear, *American Economic Review*, vol. 80, no. 2, May 1990, pp. 421-426.

"Ability, Moral Hazard, Firm Size, and Diversification," *RAND Journal of Economics*, 19, Spring 1988, pp. 72-87.

"Worker Reputation and Productivity Incentives," *Journal of Labor Economics*, vol. 5, no. 4, October 1987, part 2, pp. S87-S106.

"Imitation and Differentiation in New Product Markets," under second review at *RAND Journal of Economics*.

"Competition, Relativism, and Market Choice," with Edward P. Lazear, C.M.S.E.M.S. Working Paper No. 750, October 1987.

"An Empirical Analysis of Agency Theory and the Choice of Merger Partners," mimeo, Northwestern University, August 1987.

"The Role of Managerial Ability and Moral Hazard in the Determination of Firm Size, Growth and Diversification," Ph.D. Dissertation, University of Chicago, August 1985.

RESEARCH IN PROGRESS

"The Economics of the Essential Facilities Doctrine," with Wenqing Li.

"Exclusivity versus Non-Exclusivity in the Licensing of Intellectual Property," with Steven S. Wildman.

"Firm Structure as an Informational Barrier to Entry."

"On the War of Attrition in Markets with Endogenous Cost of Capital."

SELECTED TALKS

"Competitive and Strategic Use of Optional Calling Plans and Volume Pricing Plans," The Institute for International Research Conference for Competitive Pricing of Telecommunications Services, Chicago, Illinois, July 1998.

“Effecting a Price Squeeze Through Bundled Pricing,” Consortium for Research in Telecommunications Policy Conference, University of Michigan, Ann Arbor, Michigan, June 1998.

“The Pricing of Customer Access in Telecommunications,” Conference on Public Policy and Corporate Strategy for the Information Economy, Evanston, Illinois, May 1996.

“Diversification as a Strategic Preemptive Weapon,” University of Iowa, Iowa City, Iowa, February 1994.

“Diversification as a Strategic Preemptive Weapon,” University of Buffalo, Buffalo, New York, February 1994.

“Diversification as a Strategic Preemptive Weapon,” University of Southern California, Los Angeles, California, December 1993.

“Strategic Pricing” Winter Meetings of the Econometric Society, Discussant, Anaheim, California, December 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Michigan State University, Lansing, Michigan, November 1993.

“Diversification as a Strategic Preemptive Weapon,” Rutgers University, New Brunswick, New Jersey, November 1993.

“Diversification as a Strategic Preemptive Weapon,” University of California at Santa Cruz, Santa Cruz, California, November 1993.

“Diversification as a Strategic Preemptive Weapon,” Graduate School of Business, Stanford University, Stanford, California, November 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Purdue University, West Lafayette, Indiana, September 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Summer Meetings of the Econometric Society, Boston University, Boston, Massachusetts, June 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” University of California, Department of Economics, Berkeley, California, May 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Stanford University, Graduate School of Business, Stanford, California, May 1993.

“Diversification as a Strategic Preemptive Weapon,” Stanford University, Graduate School of Business, Stanford, California, April 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Hoover Institution, Stanford, California, April 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” University of California, Graduate School of Business, Berkeley, California, February 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Stanford University, Department of Economics, Stanford, California, February 1993.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” Hoover Institution, Stanford, California, January 1993.

“Pricing Strategies,” Session Discussant, 1992 North American Winter Meeting of The Econometric Society, Anaheim, California, January 1992.

“Diversification as a Strategic Preemptive Weapon,” University of Toronto, Toronto, Canada, November 1991.

“Diversification as a Strategic Preemptive Weapon,” Queen’s University, Kingston, Ontario, Canada, November 1991.

“Bonuses and Penalties as Equilibrium Incentive Devices, with Application to Manufacturing Systems,” University of Chicago, Chicago, Illinois, June 1991.

“The Timing of Entry into New Markets,” Summer Meetings of the Econometric Society, University of Pennsylvania, Philadelphia, Pennsylvania, June 1991.

“Innovation, Imitation, Productive Differentiation, and the Value of Information in New Markets,” University of Chicago, Chicago, Illinois, April 1991.

“Bonuses and Penalties as Equilibrium Incentive Devices, with Application to Manufacturing Systems,” Winter Meetings of the Econometric Society, Washington, D.C., December 1990.

“Corporate Spin-offs in an Agency Framework,” University of Washington, Seattle, Washington, October 1990.

“The Timing of Entry Into New Markets,” University of British Columbia, Vancouver, British Columbia, October 1990.

“Corporate Spin-offs in an Agency Framework,” Texas A&M University, College Station, Texas, April 1990.

“Firm Organization and the Economic Approach to Personnel Management,” Winter Meetings of the American Economic Association, New York, New York, Dec. 1989.

“Corporate Spin-offs in an Agency Framework,” Western Finance Association Meetings, Seattle, Washington, June 1989.

“Corporate Spin-offs in an Agency Framework,” University of Rochester, Rochester, New York, May 1989.

“Corporate Spin-offs in an Agency Framework,” North American Summer Meetings of the Econometric Society, Minneapolis, Minnesota, June 1988.

“Competition, Relativism, and Market Choice,” North American Summer Meetings of the Econometric Society, Berkeley, California, June 1987.

“Competition, Relativism, and Market Choice,” University of Chicago, Chicago, Illinois, April 1987.

“Rate Reform and Competition in Electric Power,” Discussant, Conference on Competitive Issues in Electric Power, Northwestern University, Evanston, Illinois, March 1987.

“Worker Reputation and Productivity Incentives,” New Economics of Personnel Conference, Arizona State University, Tempe, Arizona, April 1986.

“Ability, Moral Hazard, and Firm Diversification,” Yale University, New Haven, Connecticut, February 1985.

“Ability, Moral Hazard, and Firm Diversification,” University of Rochester, Rochester, New York, February 1985.

“Ability, Moral Hazard, and Firm Diversification,” Stanford University, Stanford, California, February 1985.

“Ability, Moral Hazard, and Firm Diversification,” University of Minnesota, Minneapolis, Minnesota, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” California Institute of Technology, Pasadena, California, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” Duke University, Durham, North Carolina, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” Northwestern University, Evanston, Illinois, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” Brown University, Providence, Rhode Island, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” Harvard University, Cambridge, Massachusetts, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” University of California - Los Angeles, Los Angeles, California, January 1985.

“Ability, Moral Hazard, and Firm Diversification,” University of Pennsylvania, Philadelphia, Pennsylvania, December 1994.

REFEREEING

Dr. Aron has served as a referee for The Rand Journal of Economics, the Journal of Political Economy, the Journal of Finance, the American Economic Review, the Quarterly Journal of Economics, the Journal of Industrial Economics, the Journal of Economics and Business, the Journal of Economic Theory, the Journal of Labor Economics, the Review of Industrial Organization, the European Economic Review, the Journal of Economics and Management Strategy, the International Review of Economics and Business, the Quarterly Review of Economics and Business, Management Science, the Journal of Public Economics, the Journal of Institutional and Theoretical Economics, and the National Science Foundation.

TESTIMONY

1998 Testimony on behalf of Ameritech Indiana regarding the economics of resale of local exchange services.

1998 Testimony on behalf of Ameritech Illinois regarding a new model and methodology for estimating the cost of unbundled local switching.

1998 Testimony on behalf of Ameritech Michigan regarding the provision of intraLATA toll service to customers of competing basic local exchange service providers.

1998 Testimony on behalf of Ameritech Wisconsin regarding the determination of proper forward looking costs for purposes of determining Federal Universal Service support.

1997 Testimony on behalf of Ameritech in Illinois and Wisconsin in state arbitration proceedings pursuant to the Telecommunications Act of 1996, regarding the issue of limitations of liability in provision of telecommunications services.

1997 Testimony on behalf of Ameritech in three states in proceedings before the state regulatory commissions to determine economic costs of providing unbundled network elements to competitors during the transition to competition pursuant to the Telecommunications Act of 1996.

1996 Testimony on behalf of Ameritech in five states regarding interconnection pricing and competitive issues in arbitration hearings pursuant to the Telecommunications Act of 1996.

1996 Testimony submitted to the Illinois Public Service Commission, on behalf of Ameritech, on the economic interpretation of the 1996 Telecom Act regarding interconnection pricing and costing.

July 1995, Testimony submitted to Michigan Public Service Commission, on behalf of Ameritech Michigan, on efficient pricing of local exchange services.

June 1995, Testimony submitted to Michigan Public Service Commission on "just and reasonable" price increases in local exchange services.

OTHER ENGAGEMENTS

For Ameritech, "An Analysis of Market Power in the Provision of High-Capacity Access in the Chicago LATA," submitted to the FCC, February 1999.

For Ameritech, "Proper Recovery of Incremental Signaling System 7 (SS7) Costs For Local Number Portability," White Paper submitted to the FCC, April 1999.

For Universal Studios, in the proposed merger between Bertelsmann & Kirsch. *Analyzed the potential anticompetitive effects of control of the programming rights for anchor channels, satellite capacity, and decoder technology. Evaluated potential remedies in media mergers.*

For Ameritech, Affidavit submitted to the Federal Communications Commission in the matter of "Telephone Number Portability," regarding competitively neutral cost recovery for shared and common costs for permanent local number portability.

For Ameritech Michigan, Affidavit submitted to the Federal Communications Commission in the matter "Application by Ameritech Michigan for Authorization under Section 271 of the Communications Act to Provide In-Region, InterLATA Service in the State of Michigan."

For Ameritech Indiana, appeared at technical workshop for Commission Staff and interested parties on cost modeling and cost analysis regarding the development of avoided cost discounts for wholesale service subject to the resale requirement of the Telecommunications Act of 1996.

For Flowers Industries, in the proposed merger between Flowers and Franklin Baking Company. *Analyzed potential efficiencies from the merger, market definition, and potential entry into the relevant geographic market.*

For Optus Vision of Australia, in the proposed merger between Australis and Foxtel. *Analyzed the competitive effects in the Australian pay TV industry of the proposed merger. Specifically analyzed issues of market power in the cable television industry with respect to cable TV programming and the ease of entry and exit.*

The Appraiser's Coalition, et. al, v. Appraisal Institute, et. al, Civil Action No. 93 C 913, U.S. District Court, Northern District of Illinois, Eastern Division *Analyzed issues of market power, market structure, market share, concentration, entry and exit, and antitrust injury.*

For the FTC, Revco's proposed acquisition of Rite-Aid. *Analyzed issues of market power, market structure, market share, concentration, entry and exit, and antitrust injury.*

For the Estate of Reginald F. Lewis in Carlton Investments v. TLC Beatrice International Holdings, Inc, Loida Nicolas Newis, as Executrix of the Estate of Reginald F. Lewis, et al. *Analyzed structure of executive compensation and firm and industry performance to determine whether compensation was in compliance with CEO's fiduciary duty.*

Support for Ameritech in defining its position in response to the FCC NPRM implementing the 1996 Telecommunications Act, May 1996,

For Telus of Canada, analyzed economic issues pertaining to access to cable television channel capacity, bottleneck facilities, competition, and cost, November 1996.

Reports of Debra J. Aron, "Pricing Strategy for Cellular Telephone Services," October 1994, November 1995. *Examined consumption patterns of cellular telephone services for demand elasticities and evidence of risk aversion, developed entirely new pricing strategies for cellular services in each of six major cellular telephone markets, and estimated the likely revenue effects of the strategy change for each market. Dr. Aron also developed and provided software to the client for estimating the revenue effects and the proposed pricing strategies.*

"An Analysis of the Marketability of a CPI Future" (with Edward P. Lazear), for the Chicago Mercantile Exchange, February 1985.

Report of Debra J. Aron, "Efficient Pricing of Telecommunications Equipment at the University of Chicago," for the University of Chicago, 1985.

As a Professor at Northwestern University, Dr. Aron has supervised numerous student consulting projects in which pricing strategies were analyzed for industries including health clubs, toys, paper products, food products, athletic shoes, and hardware.

PROFESSIONAL ORGANIZATIONS

Member, American Economic Association

Member, Econometric Society

Associate Member, American Bar Association

PERSONAL INFORMATION

Born: March 15, 1957

Los Angeles, CA

April 1999

ROBERT G. HARRIS

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EDUCATION

Ph.D., M.A., Economics, UNIVERSITY OF CALIFORNIA, BERKELEY, 1973-1977
Fields of Emphasis: Industrial Organization, Antitrust, Regulation, Public Finance

M.A., Social Science, MICHIGAN STATE UNIVERSITY, 1972-1973

B.A., Social Science, MICHIGAN STATE UNIVERSITY, 1961-1965

PRESENT POSITION

HAAS SCHOOL OF BUSINESS, UNIVERSITY OF CALIFORNIA, BERKELEY, 1977 –
present

Professor Emeritus, Business & Public Policy Group

Co-Director, Consortium for Research in Telecommunications Policy and Strategy

LECG, 1993 – present

Principal-in-Charge, Regulation Practice Group

PROFESSIONAL EXPERIENCE

INTERSTATE COMMERCE COMMISSION, Bureau of Accounts, Washington, DC,
1980-1981

Deputy Director, Cost, Economic and Financial Analysis

ARTRAIN, MICHIGAN COUNCIL FOR THE ARTS, Detroit, 1971-1972

Director

YOUNG AMERICA CORPORATION, St. Louis, 1969-1971

President

TIME, INC; SPECIAL ASSISTANT TO THE PUBLISHER; ROCKEFELLER FOR
PRESIDENT COMMITTEE; YOUNG CITIZENS FOR HUMPHREY; STUDENT
COALITION FOR CONGRESSIONAL ACTION, New York and Washington, DC, 1967-
1969

Special Assistant to the Publisher

NATIONAL STUDENT MARKETING CORPORATION, Washington, DC, 1966-1967

Vice President

OFFICE OF THE GOVERNOR, STATE OF OREGON, Salem, 1966
Special Assistant to the Governor

GENERAL MOTORS CORPORATION, Warren, MI, 1965
Public Relations Field Representative

ACADEMIC HONORS AND AWARDS

Industry Expert Panel, Center for Telecommunications Management, University of Southern California

Charles C. Slater Award (outstanding contribution to the Journal of Macromarketing, 1983 - 1986)

Schwabacher Prize (outstanding University service), 1983.

Phi Beta Kappa, 1977.

Alfred P. Sloan Dissertation Fellowship, 1975 - 1977.

Blue Key and Excalibur Honorary Fraternities, 1964 - 1965.

President, All-University Student Government, 1964 - 1965.

TEACHING

Graduate Courses: Business and Public Policy (MBA Core Course), Competitive Strategies & Public Policies in Telecommunications, Microeconomic Analysis for Managerial Decisions, Industry Analysis and Competitive Strategy, Doctoral Research in Business & Public Policy, Antitrust Law (School of Law, with L. Sullivan), Antitrust Economics (Department of Economics).

Undergraduate Courses: Social and Political Environment of Business (Core Course), Economics of Regulated Industries, The Corporation and the Global Economy.

Executive Education: Competitive Strategy, Telecommunications Policy and Strategy, Public Policy Strategy, Managing Business-Government Relations.

PUBLICATIONS

- 1) "The Emergence of Competition in Local Exchange Service," with Lori S. Lent, invited paper, International Engineering Consortium, *Annual Review of Communications*, 1995-96 edition.
- 2) "Competition and Public Policies in Telecommunications: A Survey of U.S. Developments," presented to Conference on Privatization and Deregulation in the US, UK and Japan, Economic Research Institute of the Economic Planning Agency of Japan, Tokyo, 1995; forthcoming in *Conference Proceedings*.

- 3) "ISDN in the United States: Strategies for Success: Part II - The Deployment and Adoption of ISDN," with Luis A. Enriquez, *New Telecom Quarterly*, 1995. Reprinted in *Blue Sky: New Horizons in Telecommunications*.
- 4) "ISDN in the United States: Strategies for Success: Part I - The Diffusion of ISDN," with Luis A. Enriquez, *New Telecom Quarterly*, 1994. Reprinted in *Blue Sky: New Horizons in Telecommunications*.
- 5) "Competition and Unbundling in Local Telecommunications: Implications for Antitrust Policy," with Gregory L. Rosston and David J. Teece, presented to Telecommunications Policy Research Conference, Solomons, Maryland, October 1994; forthcoming in *Conference Proceedings*, EAL Press.
- 6) "Principles of Imputation, Costing and Pricing of Interconnection and Essential Facilities," joint memorandum with Dr. Richard Emmerson, August 22, 1995.
- 7) "State Regulatory Policies and the Telecommunications/Information Infrastructure," presented to Workshop of the National Research Council, Washington D.C., October 1993; *The Changing Nature of Telecommunications/Information Infrastructure*, National Academy Press, 1995.
- 8) "Access and Competition Policy in the Deregulated Rail Freight Industry, with Comparisons to Competitive Access Issues in Telecommunications," with Curtis M. Grimm, presented to Columbia Institute for Telecommunications and Informatics, New York, November 1993; forthcoming in *Conference Proceedings*, Oxford University Press.
- 9) "R&D Expenditures by the Bell Operating Companies: A Comparative Assessment," invited paper, Twenty-Third Annual Conference, Michigan State University Institute of Public Utilities, Williamsburg, Virginia, December 9, 1991; *MSU Public Utility Conference Proceedings*, 1993.
- 10) "Strategic Uses of Regulation: The Case of Line-of-Business Restrictions in Communications," with Robert A. Blau, presented to Academy of Management, Miami, FL, August 14, 1991; *Research in Corporate Social Performance and Policy*, James E. Post (ed.), JAI Press, 1992.
- 11) "Structural Adjustment through Industry Deregulation: The U.S. Experience in Telecommunications and Transportation," invited paper, Pacific Economic Cooperation Conference on Structural Adjustment, Kyoto, Japan, October 11, 1990; *PECC Conference Proceedings*, 1991.
- 12) "Gaining Competitive Advantage through Strategic Public Policies: The Case of Japanese Telecommunications," invited lecture, National Economists Club, Washington, D.C., June 1988; *Economics and the Public Interest*, Richard T. Gill (ed.), Mayfield Publishing: Mountain View, CA, 1991.
- 13) "The Political Economy of Regulation: Analysis of Market Failures and Regulatory Responses," with James A. Carman, *Scaling the Corporate Wall: Readings in Social Issues of the Nineties*, S. Prakash Sethi, Paul Steidlmeier and Cecilia M. Falbe (eds.); Prentice-Hall: Englewood Cliffs, 1991.
- 14) "Telecommunications Services as a Strategic Industry: Implications for United States Policy," *Competition and the Regulation of Utilities*, Michael A. Crew (ed.), Kluwer Academic Publishers: Boston, 1990.

- 15) "Telecommunications as a Strategic Industry: Is There a Threat?" *Powernomics: Economics and Strategy After the Cold War*, Clyde V. Prestowitz, Jr., Ronald Morse and Alan Tonelson (eds.), University Press of America, 11. Reprinted from *Vital Speeches of the Day* LV(12), April 1989. Invited lecture, New York University Symposium on Telecommunications and Economic Development, December 1988.
- 16) "New Plans for Joint Ventures," with David C. Mowery, *The American Enterprise*, Sept/Oct 1990.
- 17) "Strategies for Innovation: An Overview," with David C. Mowery, *California Management Review* 32(3), Spring 1990, Co-Editor of Special Issue, "Strategies for Innovation."
- 18) "The Implications of Divestiture and Regulatory Policies for Research, Development and Innovation in the U.S. Telecommunications Industry," presented to Telecommunications Policy Research Conference, September 1988; *Telecommunications Policy*, April 1990.
- 19) "Telecommunications Policies in Japan: Lessons for the U.S.," presented to Advanced Workshop in Regulation and Public Utility Economics, Monterey, CA, July 1988; presented to Telecommunications Policy Research Conference, October 1988; *California Management Review* 31(3), Spring 1989.
- 20) "California Telecommunications Policy for the Twenty-First Century," *Report to the California Economic Development Corporation*, Sacramento, June 1988.
- 21) "A Qualitative Choice Analysis of Rail Routings: Implications for Vertical Foreclosure and Competition Policy," with Curtis A. Grimm, *The Logistics & Transportation Review*, March 1988.
- 22) "Horizontal Merger Policy: Promoting Competition and American Competitiveness," with Lawrence A. Sullivan, *Antitrust Bulletin*, January 1987.
- 23) "The Political Economy of Regulation," with James M. Carman, *Business & Society*, S.P. Sethi and C. Falbe (eds.), Lexington Books: Lexington, 1987.
- 24) "Public Regulation of Market Activity: Regulatory Failures," with James M. Carman, *Journal of Macromarketing*, Spring 1986.
- 25) "The Effects of Railroad Mergers on Industry Productivity and Performance," with Curtis M. Grimm, invited paper, Transportation Research Board, National Academy of Engineering, January 1986; *Transportation Research Record* 1029, 1986.
- 26) "Revitalization of the U.S. Freight Industry: An Organizational Perspective," with Curtis M. Grimm, *International Railway Economics*, K. Button & D. Pitfield (eds.); Crower: London, 1985.
- 27) "The Values of Economic Theory in Management Education," *The American Economic Association Papers & Proceedings* 74(2), May 1984.
- 28) "Public Regulation of Market Activity: Regulatory Responses," with James M. Carman, *Journal of Macromarketing*, Spring 1984.
- 29) "Antitrust Market Definition: An Integrated Approach," with Thomas M. Jorde, *California Law Review* 72(1), January 1984. Reprinted in *Corporate Counsel's Annual*, Matthew Bender, 1985. Reprinted in *Antitrust Anthology*, A.I. Gavil (ed.), Anderson Publishing, 1995.

PAPERS, REPORTS, PRESENTATIONS & PROFESSIONAL PROCEEDINGS

- 1) "Telecommunications Trade and Investment Opportunities in China and India," presented to the Massachusetts Telecommunications Council, Boston, February 1995.
- 2) "The Strategic Implications of Interactive Broadband Telecommunications Networks for Competition and Public Policy," presented to the National Communications Forum, Chicago, September 1994.
- 3) "Competitive Implications of Vertical Relations between Equipment Vendors and Telecommunications Services: Lessons from the French Experience," with Joanne Oxley, presented to European Regional Conference of the International Telecommunications Society, Stenungsbaden, Sweden, June 21, 1993.
- 4) "Obtaining Competitive Intelligence and Creating Competitive Advantage through the Public Policy Process," with Steven Harris, invited paper, Annual Conference of the Society for Competitive Intelligence Professionals, Los Angeles, April 2, 1993.
- 5) "Deployment and Adoption of Integrated Services Digital Network in the U.S.: Progress and Public Policy Obstacles," with Luis Enriquez, invited paper, Twenty-Fourth Annual Conference, Michigan State University Institute of Public Utilities, Williamsburg, Virginia, December 8, 1992.
- 6) "Market Definition and Market Power in the Sports and Entertainment Industry," invited presentation, Antitrust Section, American Bar Association Annual Proceedings, San Francisco, August 1992.
- 7) "The Design of Incentive Regulation for Telecommunications," invited presentation, Conference on Alternative Regulation, Illinois Commerce Commission, Chicago, July 1992.
- 8) "The Effects of Public Policies on ISDN Deployment and Adoption in the U.S.," presented to International Telecommunications Society, Cannes, France, June 1992.
- 9) "Removing the MFJ Restriction on InterLATA Services," invited testimony, Subcommittee on Telecommunications & Finance, U.S. House of Representatives, Washington D.C., May 1992.
- 10) "The Implications of Telecommunications Infrastructure Investment for R&D, Innovation and Competitiveness," invited testimony, Subcommittee on Communications, U.S. Senate, Washington D.C., February 1992.
- 11) "Principles of Costing and Pricing for Telecommunications Regulatory Policy," invited testimony, Colorado Public Utilities Commission En Banc Hearing, Denver, February 1992.
- 12) "Deregulation and Interstate Bank Entry in California," with Lee Burke, Research Report of the California Policy Seminar, UC Berkeley, April 1991.
- 13) "Assessing the Future of Telecommunications in the Global Economy," invited address, California Telephone Association, Monterey, CA, February 1991.

- 14) "Economic Rationale for a National Fiber Optic Infrastructure," invited address, Congressional Staff Forum on Telecommunications (sponsored by Ameritech), Washington D.C., February 1991.
- 15) "Applications of Incentive Regulation: An International Comparison," invited presentation, Conference of California Public Utilities Counsel, Long Beach, CA, October 1990.
- 16) "The Role of Telecommunications in Regional Economic Development," invited address, Rocky Mountain State Leaders Conference, Billings, Montana, October 1990.
- 17) "Telecommunications and Public Policies in the Global Market," invited address, Carnegie Council, New York, NY, October 1990.
- 18) "Why We Need a National Telecommunications Policy: A Comparative Perspective," invited address, Policy Issues Management Conference, Bell Communications Research, Murray Hill, NJ, October 1990.
- 19) "Incentive Regulation for Telephone Utilities," invited presentation, Workshop of the Colorado Public Utilities Commission, Denver, September 1990.
- 20) "The Role of Telecommunications Policy," invited lecture, Conference on Economic Development in the Pacific Northwest, Portland, Oregon, September 1990.
- 21) "The Changing Economics of Telecommunications: Implications for U.S. Policy and Competitiveness," invited briefing of U.S. Congressional staff on telecommunications (sponsored by Pacific Telesis), San Francisco, August 1990.
- 22) "Communications Competitiveness and Infrastructure Modernization Act of 1990," invited testimony, Communications Subcommittee, U. S. Senate, Washington D.C., July 1990.
- 23) "Investing in America's Future," invited essay, 1989 Annual Report of Southwestern Bell Corporation, St. Louis, 1990.
- 24) "The Public Switched Telephone Network and Rural Economic Development," invited lecture, Montana State Leaders' Conference, Helena, April 1990.
- 25) "Is Public Policy Meeting the Needs of Consumers?" invited panelist, Conference on Telecommunications Technologies and Policies, Center for Communications and Information Science & Policy, University of Pennsylvania, March 1990.
- 26) "Telecommunications as a Strategic Industry," invited address, New England Council, Boston, February 1990.
- 27) "Fiber to the Customer: A Public Policy Perspective," invited paper, Western Communications Forum, San Diego, February 1990.
- 28) Session Chair and Moderator, "State Regulatory Reform: Recent and Future Trends," Fifth Conference on State Telecommunications Regulation, University of Utah, Salt Lake City, January 1990.
- 29) Invited Panelist, "Crossroads of Information Technology," Board on Telecommunications and Computer Applications, National Academy of Engineering, Washington D.C., October 1989.
- 30) Invited Panelist, "Industry Forum," Annual Meeting of the U.S. Telephone Association, San Francisco, October 1989.

- 31) "Strategic Lessons from Deregulated Industries," paper presented to Strategic Management Society, San Francisco, October 1989.
- 32) "Deregulation in the Transportation Industries: Lessons for Telecommunications Managers," invited paper, Center for Telecommunications Management, University of Southern California, October 1989.
- 33) "Price Cap Regulation and Economic Forecasting," invited presentation to 1989 National Forecasting Conference, Bell Communications Research, San Francisco, May 1989.
- 34) "The Strategic Implications of Telecommunications Deregulation in Europe," invited presentation, Strategic Management Society, Amsterdam, October 1988.
- 35) "Telecommunications Deregulation: Implications for the California Economy," invited presentation, California Foundation for the Environment and the Economy, Carmel, June 1988.
- 36) "A Comparison of U.S. and Japanese Policies toward Information Technologies," invited presentation, International Public Economics Association, Tokyo, May 1988.
- 37) "Information Technologies, Public Policy, and Regional Economic Development," invited address, Conference on Regional Development in Japan, Hokkaido University, Sapporo, Japan, May 1988.
- 38) "The Implications of Line-of-Business Regulation for Diversification Strategy & Enterprise Structure," presented to Strategic Management Society, Boston, October 1987.
- 39) "Alternative Regulatory Frameworks for Local Exchange Carriers," invited presentation, En Banc Hearing of the California Public Utility Commission, September 1987.
- 40) "Emerging Telecommunications Policies in Europe," Briefing of California Legislative Leaders, Los Angeles, September 1987.
- 41) "Japanese Corporate Philanthropy in the United States," presented to Academy of Management, New Orleans, August 1987; Center for Research in Management Working Paper BPP-23; published in summary form in *Strategic Directions*, with Barbara Lombardo and David Vogel, April 1989.
- 42) "The Effects of Deregulation on Competition and Competition Policy in Banking: A Review of the Literature," Working Paper No. 4, National Center for Financial Services, Berkeley, August 1987.
- 43) "Competitive Strategies under Regulatory Constraint: Implications of the AT&T Divestiture on Vertical Relations in Telecommunications," with David J. Teece, paper presented to Strategic Management Society, Singapore, 1986.
- 44) "The Economic Consequences of Deregulation," invited address, Emerging Issues Program, Conference of National State Legislative Leaders, Los Angeles, September 1986.
- 45) "Public Policies toward Utility Diversification: An Overview," invited presentation, California Policy Seminar/California Senate Office of Research, Berkeley, April 1986.
- 46) "New Technologies for Local Loop Access: An Economic and Regulatory Analysis," with Gary Pisano, Office of Technology Assessment, United States Congress, June 1985.

- 30) "Structural Economics of the U.S. Rail Freight Industry: Concepts, Evidence and Merger Policy Implications," with Curtis M. Grimm, *Transportation Research* 17A(4), July 1983.
- 31) "Vertical Foreclosure in the Rail Freight Industry: Economic Analysis and Public Policy Prescriptions," with Curtis M. Grimm, *ICC Practitioners' Journal*, July 1983.
- 32) "Market Definition in the Merger Guidelines: Implications for Antitrust Enforcement," with Thomas M. Jorde, *California Law Review* 71(3), March 1983. Reprinted in *Antitrust Policy in Transition: The Convergence in Law and Economics*, Fox and Halverson (eds.), American Bar Association, 1984.
- 33) "Public Regulation of Market Activity: Institutional Typologies of Market Failures," with James M. Carman, *Journal of Macromarketing*, Spring 1983.
- 34) "Potential Benefits of Rail Mergers: An Econometric Analysis of Network Effects on Service Quality," with Clifford Winston, *Review of Economics and Statistics* 65(1), February 1983.
- 35) "Regulation: A Long Term Perspective," *Business Environment/Public Policy: The Field and Its Future*, Edwin M. Epstein and Lee E. Preston (eds.), St. Louis, 1982.
- 36) "The Financial Performance and Prospects of Railroads in the South and Southwest," with Curtis M. Grimm, *Texas Business Review*, November/December 1982.
- 37) "More on Passing On: A Reply to Cooter and to Viton and Winston," with Lawrence A. Sullivan, *Pennsylvania Law Review* 129(6), June 1981.
- 38) *Rationalizing the Rail Freight System: Costs and Benefits of Branch Line Abandonments*, U.S. Department of Transportation, Washington, D.C., 1981.
- 39) "Determinants of Railroad Profitability: An Econometric Study," with Theodore E. Keeler, *Economic Regulation: Essays in Honor of James R. Nelson*, William G. Shepherd and Kenneth D. Boyer (eds.), Michigan State University Press, 1981.
- 40) "Passing on the Monopoly Overcharge: A Response to Landes and Posner," with Lawrence A. Sullivan, *Pennsylvania Law Review* 128(5), May 1980.
- 41) "Suppliers of Last Resort: Economics of Self-Supply in Common Carrier Industries," with Robert A. Meyer, *Quarterly Review of Economics and Business* 19(4), Winter 1980.
- 42) "Economic Analysis of Light Density Rail Lines," *The Logistics and Transportation Review* 16(1), Winter 1980.
- 43) "Passing on the Monopoly Overcharge: A Comprehensive Policy Analysis," with Lawrence A. Sullivan, *Pennsylvania Law Review* 128(2), December 1979.
- 44) "Rationalizing the Physical Structure of the U.S. Rail Freight Industry," *National Railroad Policy*, Joint Economic Committee, U.S. Congress, Washington, D.C., Government Printing Office, 1979.
- 45) "Simple Analytics of Rail Costs and Disinvestment Criteria," *Transportation Research Record* 687, 1978.
- 46) "Economics of Traffic Density in the Rail Freight Industry," *Bell Journal of Economics* 8(2), Autumn 1977.

- 47) "Corporate Community Involvement in the Greater San Francisco Bay Area," with D. Vogel and J. Logsdon, Center for Research in Management, working paper, Berkeley, May 1985.
- 48) "The Future of Telecommunications Regulation," invited presentation, En Banc Hearing of the California Public Utilities Commission, San Francisco, November 1984.
- 49) "Testimony in Support of the Taxpayer Antitrust Enforcement Act," Judiciary Committee, U.S. Senate, May 1984.

ADMINISTRATIVE POSITIONS, UNIVERSITY OF CALIFORNIA

WALTER A. HAAS SCHOOL OF BUSINESS

Chair, Business and Public Policy Group (1983-84, 1986-93).
Policy and Planning Committee (1986-88; 1991-93); Chair (1987-88; 1992-93).
Chair, Program in Business and Social Policy (1986-90).
Business School Building Program Committee (1986-91).
Ph.D. Field Advisor, Business and Public Policy (1981-87; 1989-91).
Policy and Planning Committee (1991-3; Chair, 1992-93).
Member, Board of Directors, Washington Campus Program (1990-93).
Director, The Executive Program (1983-85).
Director, Executive Programs in Telecommunications (1989-92)
Chair, Executive Education Task Force (1991-93).
Member, Board of Directors, Berkeley Center for Executive Development.

UNIVERSITY OF CALIFORNIA, BERKELEY

Executive Committee, Center for Research in Management (1989-).
Advisory Board, Lester Center for Innovation and Entrepreneurship (1992-).
Chancellor's Advisory Committee on Parking (1988-89).
Executive Committee, National Financial Services Center (1986-88).
Executive Committee, Institute of Transportation Studies (1981-83).
Director, Center for Transportation Policy Research (1980-82).

UNIVERSITY OF CALIFORNIA, SYSTEMWIDE

Working Group on Technology Transfer (1988-90).
Task Force on Telecommunications and Information Policy Research (1984-85).

PROFESSIONAL AFFILIATIONS

American Economic Association
Academy of Management
Strategic Management Society
International Telecommunications Society
Association of Public Policy Analysis and Management

SERVICE TO PROFESSIONAL JOURNALS, SOCIETIES & PUBLIC AGENCIES

Governor's Ad Hoc Committee, Golden State Quality Awards (1991-92)

Chair, Ninth Annual International Conference of the Strategic Management Society, San Francisco (1989)

Associate Editor, California Management Review

Associate Editor, Logistics and Transportation Review

Editorial Advisory Board, Transportation Research

Session Organizer, Telecommunications Policy Research Conference (1988, 1989)

Session Organizer, Academy of Management (1991)

Reviewer/Referee: *Bell/RAND Journal of Economics; Industrial and Corporate Change; Journal of Asian Economics; Journal of Economics and Business; Journal of Public Policy Analysis & Management; Journal of Regulatory Economics; National Science Foundation; Quarterly Review of Economics and Business; Review of Economics and Statistics; Telecommunications Policy.*

CONSULTING & TESTIMONY

Economic Consulting to Public Agencies

California Department of Consumer Affairs (industry analysis; telecommunications policy); California Office of Attorney General (antitrust analysis in tire industry, merger analysis in food retailing industry, resale price maintenance in consumer electronics, infant formula pricing); California Public Utilities Commission (teach regulatory economics & policy to Commission staff); Interstate Commerce Commission (rate regulatory policy, merger policy, costing methodology); Office of Technology Assessment (telecommunications policy); U.S. Department of Transportation (railroad industry rationalization, merger policy); U.S. General Accounting Office (transportation policy).

Regulatory Expert Testimony

Pacific Bell (product pricing, competitive strategy, regulatory policy, broadband deployment, MFJ interLATA relief); US WEST (regulatory policy, costing and pricing principles, local competition and interconnection); Ameritech (price regulation; local competition policy); General Telephone (pricing, regulatory policy); Western Coal Traffic League (railroad pricing); Consolidated Freightways (motor carrier pricing); Southern Pacific Transportation Co. (route rationalization analysis; rail merger analysis; pricing of trackage rights); American Presidents Intermodal Co. (competition policy, merger analysis); Bell Communications Research (R&D policy analysis); Bell Atlantic (price regulation, cable rate regulation; cellular telephone joint venture); Southwestern Bell (price regulation, local competition policy); BellSouth (price regulation, local competition policy); NYNEX (FCC spectrum auction rules); United States Telephone Association (FCC price regulation); MFJ Task Force (MFJ manufacturing relief); AGT and Stentor Companies (Canadian interconnection and local competition policy); Iusacell (Mexican interconnection and local competition policy).

Business Litigation Expert Witness Testimony

Electrical contracting; biotechnology manufacturing equipment; corrugated steel pipe products; pipe fabrication; vision care services; electronic lighting ballasts; motion picture production, distribution and exhibition; regional shopping center development; semiconductor manufacturing equipment; digital-analog converters; workmen's compensation insurance; semiconductor manufacturing; resale of telecommunications equipment and services; after-market servicing of telecommunications equipment; on-line

information and transaction services; magazine publishing; telecommunications equipment;
Internet services; citric acid.

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